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Amendments to the Claims:

This following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A processor-readable medium comprising processor-executable instructions configured for:

scanning a reference pattern on a disc to create a table of coordinate data; and calibrating the gain of a fine actuator based on the table of coordinate data.

2. (Original) A processor-readable medium as recited in claim 1, wherein the scanning comprises:

generating a reflective signal based on the reference pattern;
converting a duty cycle of the reflective signal into a radius value; and recording the radius value and an associated DAC (digital to analog convert) count in the table.

3. (Original) A processor-readable medium as recited in claim 1, wherein the calibrating comprises:

performing a line fitting algorithm on the coordinate data to generate a best fit line; and

calibrating the gain of the actuator based on the slope of the best fit line.

4. (Original) A processor-readable medium as recited in claim 1, wherein the scanning comprises:

writing a number to a DAC (digital to analog converter);
driving a power amplifier with a DAC output voltage;
driving an actuator current with the power amplifier;
altering the number written to the DAC by a known amount n times;

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for each number written to the DAC, calculating a radius from a duty cycle of a reflective signal generated from the reference pattern; and
recording into the table, each radius and each number written to the DAC.

5. (Original) A processor-readable medium as recited in claim 1, wherein the scanning comprises:

scanning a first half of the reference pattern;
calculating a first radius based on the first half of the reference pattern;
scanning a second half of the reference pattern; calculating a second radius based on the second half of the reference pattern; and
averaging the first radius and the second radius to generate coordinate data.

6. (Original) A processor-readable medium as recited in claim 5, wherein the first half of the reference pattern and the second half of the reference pattern are 180 degrees apart from one another on the non-data side of the disc.

7. (Original) A processor-readable medium as recited in claim 1, wherein the reference pattern has a linear variation with the radius of the disc.

8. (Original) A processor-readable medium as recited in claim 1, wherein the reference pattern is a sawtooth reference pattern.

9. (Original) An optical disc read-write device comprising the processor-readable medium as recited in claim 1.

10. (Original) A processor-readable medium comprising processor-executable instructions configured for:

scanning a sawtooth pattern on a non-data side of an optical disc;
generating a reflective signal based on the scanning; converting a duty cycle of the reflective signal into a radius value;
incrementing a DAC (digital to analog converter) count to a new DAC count;

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repeating the scanning, the generating, and the converting; and calculating a fine actuator gain based on the DAC counts and the radius values.

11. (Original) A processor-readable medium as recited in claim 10, comprising further processor-executable instructions configured for recording each DAC count and each radius into a table.

12. (Original) A processor-readable medium as recited in claim 10, wherein the calculating comprises:

configuring the DAC counts and the radius values as coordinate data; and performing a line fitting algorithm on the coordinate data to generate a best fit line.

13. (Original) A processor-readable medium as recited in claim 12, wherein the calculating further comprises calibrating the fine actuator gain based on a slope of the best fit line.

14. (Original) An optical disc read-write device comprising the processor-readable medium as recited in claim 10.

15. (Original) A method for calibrating a fine actuator comprising:
generating a table of coordinate data by scanning a reference pattern on an optical disc; and
calibrating the gain of a fine actuator based on the table of coordinate data.

16. (Original) A method as recited in claim 15, wherein the generating comprises:
generating a reflective signal based on the scanning;
calculating a radius from a duty cycle of the reflective signal; and
recording the radius value and an associated DAC (digital to analog convert) count in the table.

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17. (Original) A method as recited in claim 15, wherein the calibrating comprises: fitting the coordinate data to a best fit line using a line fitting algorithm; and calibrating the gain of the actuator based on the slope of the best fit line.

18. (Original) A method as recited in claim 15, wherein the generating comprises: calculating a first radius based on scanning a first half of the reference pattern; calculating a second radius based on scanning a second half of the reference pattern; and averaging the first radius and the second radius to generate coordinate data.

19. (Original) A method as recited in claim 15, wherein the reference pattern is a sawtooth reference pattern.

Claims 20-27 (Canceled)